

ABSTRACT

HEMATOLOGICAL ABNORMALITIES IN ALCOHOLICS

Dr.P.Thirunavukarasu,Dr.M.Natarjan,

Dr.P.S.Arulrajamurugan,Dr.B.Palanikumar

DEPARTMENT OF GENERAL MEDICINE, MADURAI MEDICAL
COLLEGE, MADURAI

BACKGROUND-

- Alcohol consumption has increased considerably in the past 25 years, the need for accurate methods for detection and monitoring of alcohol related problems in different health care settings is clearly considerable. Despite such a need, there is no exact clinical finding or symptom in a patient history, that is sufficiently sensitive and specific to detect alcohol related problem in its early phase. The clinical signs of alcohol abuse are rather minimal in the early phase of this process while most of the signs arise later after several years of excessive drinking. Also alcohol consumption is usually under-reported in interviews; alcohol abusers tend to underestimate their drinking even more than the social drinkers. The reasons for using biological laboratory markers are that they give objective information about alcohol consumption and changes in drinking habits. Among these laboratory markers hematological abnormalities

appear earlier than Alcohol effect on hematopoietic system are both direct & indirect, its also dose dependent, The direct consequences of excessive alcohol consumption include toxic effects on the bone marrow; suppress the production of all blood cell precursors. Alcohol's indirect effects include nutritional deficiencies that impair the production and function of various blood cells. among the hematological abnormalities Increased MCV values have been observed in 64-89% of alcohol abusers. Increased MCV values are also found in cases of vitamin B12 and folic acid deficiency, liver diseases, several haematological disorders, hypothyroidism, in users of antiepileptics. Alcohol abuse has been found to explain increased MCV values in 89% of men and 56% of women in general practice. MCV return to normal after 3 months of abstinence. n biochemical abnormalities & also reversible with abstinence.

AIMS AND OBJECTIVES:-

The aim of our study was to investigate the alterations of hematological markers in a population of alcohol dependent individuals since the need for sensitive biological markers to detect and prove recent drinking has been the focus of many research groups. Decision making about the role of alcohol as an aetiological factor for these abnormalities in motivating patients to change their drinking habits by demonstrating the reversal of these abnormalities after abstinence.

METHODS:-

Setting:Department of Medicine,Govt Rajaji Hospital,Madurai Medical College,Madurai.Inclusion criteria: Age 20-40 yr, Alcohol consumption 210 gms of ethanol/week in males & 100gm of ethanol/week in females for minimum of one year .Exclusion criteria : Patients with Liver disease, Viral hepatitis, Renal disease,Known Thyroid diseases, Hematological malignancies,h/o drug intake that alter hematological profile,Immunosuppressed individual, Other co-morbid illness.DESIGN OF STUDY:Prospective observational study
PERIOD OF STUDY:6 Months from November 2015 to April 2016
PARTICIPANTS:100 patients in the age group of 20-40 years with history of alcohol consumption 210 gms/week in males & 100 gms /week in females for minimum one year admitted with another primary admitting diagnosis in Department of Medicine,government Rajaji hospital
METHOD:100 patients admitted in medical ward with another primary diagnosis are selected based on the inclusion/exclusion criteria & history is obtained from each patient based on the previously prepared proforma & clinical examination.USG abdomen & pelvis ,viral markers will be done to rule out pre existing alcoholic liver disease ,blood samples collected & sent for complete hemogram,peripheral smear,serum B12 assay will be done in all patients to screen for pre existing B12 deficiency

RESULTS :

In our study we included 100 patients after applying inclusion & exclusion criteria, short history & clinical examination are done in all patients. All the patients were screened for serum B12 levels, MCV, Peripheral smear, CDT, GGT values are done in all patients. In our study we included 100 patients between 20-40 years of age, incidentally all of them are males, 13% are less than or equal to 25 years, 29% are between 26-30 years of age, 30% between 31-35 years & 28% are between 36-40 years of age. In the 100 patients we enquired about their drinking habits & looked for MCV, GGT, CDT, Spur cells & Pancytopenia in peripheral smear, serum B12 levels, 11% had pancytopenia & 4% had spur cells in peripheral smear which are statistically significant. As the duration of alcohol increases the incidence of pancytopenia & presence of spur cells increases. As the duration of alcohol & quantity of consumption increases serum B12 values decrease, as the B12 value decreases the incidence of Pancytopenia increases, hence the incidence of Pancytopenia has positive correlation both to duration & quantity of alcohol intake. There is a significant positive correlation between quantity & duration of alcohol intake & rise in CDT levels. There is a significant positive correlation between quantity & duration of alcohol intake & rise in CDT levels. MCV rises as the duration & quantity of alcohol intake increases which is

independent of serum B12 levels. As the quantity & duration of alcohol intake increases the serum B12 levels & Platelet count decreases.

CONCLUSION : Alcohol has numerous adverse effects on the various types of blood cells and their functions. For example, heavy alcohol consumption can cause generalized Suppression of blood cell production resulting in Pancytopenia & thrombocytopenia and the production of structurally abnormal blood cell precursors like spur cells that cannot mature into functional cells, apart from that there is a significant rise in CDT ,GGT levels & also there is rise in MCV both megaloblastic & non megaloblastic macrocytosis occurs in significant percentage with the reduction in serum B12 levels, hence these parameters could be considered as markers of alcohol abuse. Due to the limited sensitivity of any single laboratory marker, the parallel measurement of CDT with traditional alcohol markers may enhance the ability to detect alcohol abuse. studies indicate that the combined measurement of CDT and GGT or of CDT and MCV could achieve such an enhancement

Key Words : Alcoholism, CDT, CGT. B12, Pancytopenia, spur cells.

